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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/732,849 | 12/09/2003 | Takashi Tsutsumi | 03689/LH | 8810 |

1933 7590 08/25/2006

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| EXAMINER | |
|---|---|
| LIANG, LEONARD S | |
| ART UNIT | PAPER NUMBER |
| 2853 | |

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/732,849 | TSUTSUMI ET AL. | |
| | Examiner | Art Unit | |
| | Leonard S. Liang | 2853 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *12 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) *10-16,18 and 19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-9 and 17* is/are rejected.

7)☒ Claim(s) *4 and 5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 December 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some* c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Election/Restrictions*

In the response filed on 12/19/05, the applicant elected claims 1-9 and 17. These claims will herein be examined and all other claims will be withdrawn from consideration.

### *Specification and Drawings*

The lengthy specification and drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification and drawings. Specifically, the applicant is required to match all references in the drawings to the references in the specification.

### *Claim Rejections - 35 USC § 103*

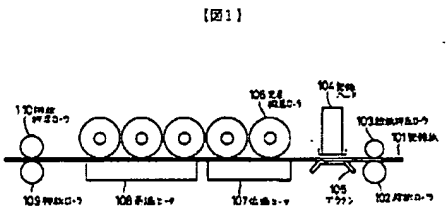
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 6-7, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al (JP Pat 05104706A) in view of Nishikawa (US Pat 6688741) and Mizoguchi et al (US Pat 6179418).

Ikeda et al discloses:

- {claim 1} An ink jet printer (figure 1; abstract); an image forming section for forming an image by ejecting a pigment ink toward a recording medium (figure 1, reference 104); a fixing member for fixing the image by heating and pressurizing the recording medium on which the image is formed by the image forming section (figure 1, reference 108); a drying member for drying the ink used for forming the image before the image is fixed to the recording medium by the fixing member (figure 1, reference 107)



- {claim 6} a heating control section for controlling heating of the recording medium, which is carried out by the fixing member; wherein the heating control section controls the heating carried out by the fixing member in accordance with an operation condition of the drying member controlled by the drying member control section (abstract; low temperature heating v. high temperature heating)
- {claim 7} wherein the drying member comprises a heating member for heating the recording medium (figure 1, reference 107); the drying member control section controls heating carried out by the heating member (abstract); and the heating control section controls the heating carried out by the fixing member in accordance with a heating condition of the heating member controlled by the drying member control section (abstract)

- {claim 17} An image recording method using an ink jet printer (figure 1; abstract); forming an image by ejecting a pigment ink toward a recording medium (figure 1, reference 104); fixing the image to the recording medium by heating and pressurizing the recording medium (figure 1, reference 107, 108)

Ikeda et al differs from the claimed invention in that it does not disclose:

- {claim 1} a recording medium in which a surficial layer includes thermoplastic fine particles; a temperature detecting member for detecting a temperature in the case; a humidity detecting member for detecting a humidity in the case; and a drying member control section for controlling an operation of the drying member in accordance with the temperature detected by the temperature detecting member and the humidity detected by the humidity detecting member
- {claim 2} a temperature judging section for judging whether the temperature detected by the temperature detecting member is not less than a first predetermined value; and a humidity judging section for judging whether the humidity detected by the humidity detecting member is not less than a second predetermined value; wherein the drying member control section operates the drying member when the temperature judging section judges that the temperature detected by the temperature detecting member is not less than the first predetermined value and the humidity judging section judges that the humidity detected by the humidity detecting member is not less than the second predetermined value

- {claim 17} a recording medium in which a surficial layer includes thermoplastic fine particles

Nishikawa discloses:

- {claims 1 and 17} a recording medium in which a surficial layer includes thermoplastic fine particles (abstract)

Mizoguchi et al discloses:

- {claim 1} a temperature detecting member for detecting a temperature in the case (figure 4, reference 24); a humidity detecting member for detecting a humidity in the case (figure 4, reference 25); a drying member control section for controlling an operation of the drying member in accordance with the temperature detected by the temperature detecting member and the humidity detected by the humidity detecting member (column 2, lines 52-60; column 3, lines 20-31)
- {claim 2} a temperature judging section for judging whether the temperature detected by the temperature detecting member is not less than a first predetermined value; and a humidity judging member for judging whether the humidity detected by the humidity detecting member is not less than a second predetermined value; wherein the drying member control section operates the drying member when the temperature judging section judges that the temperature detected by the temperature detecting member is not less than the first predetermined value and the humidity judging section judges that the humidity detected by the humidity detecting member is not less than the second predetermined value (naturally suggested by column 3, lines 20-31; some

judgment must necessarily occur in order for fixing means to be driven corresponding to a detected humidity and temperature result)

- {claim 17} adjusting an amount of dryness of the ink used for forming the image after the forming step and before the fixing step, in accordance with a temperature and a humidity in the ink jet printer (figure 4, reference 24, 25; column 2, lines 52-60; column 3, lines 20-31)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Nishikawa into the invention of Ikeda et al. The motivation for the skilled artisan in doing so is to gain the benefit of producing a medium coating, which doesn't easily crack or peel, thus creating a better image.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Mizoguchi et al into the invention of Ikeda et al. The motivation for the skilled artisan in doing so is to gain the benefit of improving image quality by adjusting the amount of heat based on detected external factors, such as temperature or humidity.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al (JP Pat 05104706A) in view of Nishikawa (US Pat 6688741) and Mizoguchi et al (US Pat 6179418), as applied to claim 2, and further in view of Shimoda et al (US Pat 6126281).

Ikeda et al, as modified, teaches all limitations of the claimed invention except for the following:

- {claim 3} wherein the drying member comprises an air blowing member for blowing air to the recording medium, and a heating member for blowing air to the recording medium, and a heating member for heating the recording medium; and the drying member control section controls at least one of air blow carried out by the air blowing member and heating carried out by the heating member

Shimoda et al discloses:

- {claim 3} wherein the drying member comprises an air blowing member for blowing air to the recording medium, and a heating member for blowing air to the recording medium, and a heating member for heating the recording medium; and the drying member control section controls at least one of air blow carried out by the air blowing member and heating carried out by the heating member (naturally suggested in light of column 2, lines 24-27; heat blower is equivalent known means of drying; control of drying in naturally suggested)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Shimoda et al into the invention of modified Ikeda et al. The motivation for the skilled artisan in doing so is to gain the benefit of enhancing the directional focus of heating.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al (JP Pat 05104706A) in view of Nishikawa (US Pat 6688741) and Mizoguchi et al (US Pat 6179418), as applied to claim 1, and further in view of Castle et al (US Pat 6109723).

Ikeda et al, as modified, teaches all limitations of the claimed invention except for the following:

- {claim 8} an ink volume calculating section for calculating volume of the ink ejected to a predetermined unit area of the recording medium when the image is formed by the image forming section; and an ink volume judging section for judging whether the volume of the ink, which is calculated by the ink volume calculating section is not less than a fourth predetermined value; wherein the drying member control section operates the drying member when it is judged by the ink volume judging section that the volume of the ink is not less than the fourth predetermined value

Castle et al discloses:

- {claim 8} an ink volume calculating section for calculating volume of the ink ejected to a predetermined unit area of the recording medium when the image is formed by the image forming section; and an ink volume judging section for judging whether the volume of the ink, which is calculated by the ink volume calculating section is not less than a fourth predetermined value; wherein the drying member control section operates the drying member when it is judged by the ink volume judging section that the volume of the ink is not less than the fourth predetermined value (abstract; column 3, lines 18-44)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Castle et al into the invention of modified Ikeda et al. The motivation for the skilled artisan in doing so is to gain the benefit of taking

peripheral characteristics of an ink jet printhead into account in order to determine an optimum print density.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al (JP Pat 05104706A) in view of Nishikawa (US Pat 6688741) and Mizoguchi et al (US Pat 6179418), as applied to claim 1, and further in view of Kaga et al (US Pat 6902266).

Ikeda et al, as modified, teaches all limitations of the claimed invention except for the following:

- {claim 9} wherein the drying member dries the ink of the image formed on the recording medium so that the image has a C value of not less than 80 by fixing the image with the fixing member

Kaga et al discloses:

- {claim 9} wherein the drying member dries the ink of the image formed on the recording medium so that the image has a C value of not less than 80 by fixing the image with the fixing member (column 23, lines 48-67)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Kaga et al into the invention of modified Ikeda et al. The motivation for the skilled artisan in doing so is to gain the benefit of providing greater image clarity.

***Allowable Subject Matter***

Claims 4-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 4 discloses "a vapor volume calculating section for calculating a vapor volume per unit volume of air in the case in accordance with the temperature detected by the temperature detecting member and the humidity detected by the humidity detecting member; and a vapor volume judging section for judging whether the vapor volume calculated by the vapor volume calculating section is not less than a third predetermined value; wherein the drying member control section operates the drying member when the vapor volume judging section judges that the vapor volume calculated by the vapor volume calculating section is not less than the third predetermined value," which was not found, taught, or disclosed in the prior arts.

Claim 5 depends on objected claim 4.

### *Response to Arguments*

Applicant's arguments filed 06/12/06 have been fully considered but they are not persuasive.

The applicant argues, "By contrast, Mizoguchi et al discloses controlling a pressure roller (that is, the fixing means) in accordance with the temperature detected by the temperature detecting member and the humidity detected by the humidity detecting member...Accordingly, it is respectfully submitted that the logical combination of Mizoguchi et al with Ikeda et al would teach controlling the fixing unit, not the low temperature heater 107..."

While Mizoguchi et al does disclose controlling a pressure roller in accordance with detected temperature and humidity, that is only one embodiment disclosed by Mizoguchi et al. Mizoguchi et al also discloses detecting a surface condition and controlling a heater as a result. The examiner refers to column 5, lines 41-46, where it is disclosed, "As described above, according to the present invention, the surface condition of the record medium is detected and determined. In addition, the heater temperature is varied **and/or** the pressure is applied. Thus, data can be properly fixed on the record medium. Moreover, data can be fixed with optimum power consumption" (emphasis added). This shows that the main invention of Mizoguchi et al isn't necessarily limited by the presence of a pressure roller. Rather, the main teaching of Mizoguchi is that surface conditions (such as ambient temperature and humidity) can be detected and a heating/fixing function can be operated in accordance with these detected measurements. That teaching is what Ikeda et al lacks and Mizoguchi et al provides.

### *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S. Liang whose telephone number is (571) 272-2148. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

08/19/06
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